What is claimed is:

1 A moving image coding device that makes a compression and coding for moving images, said image coding device comprising:

means for analyzing images, which exist in a constant interval, to observe characteristics of each image;

based on said observed characteristics, means for estimating complexity degrees of said images;

means for pre-allocating code quantity to said constant interval, and computing target code quantity with which said allocated code quantity is assigned to each image for all images within said constant interval based on said estimated complexity degrees,;

a buffer which is accumulating codes that are generated as a result of having coded said images;

when said computed target code quantity is assigned to each of said images, means for calculating a transition of occupancy in said buffer of said code to regulate said target code quantity so that said buffer does not give rise to an overflow or an underflow; and

means for making a compression and coding for said images according to said regulated target code quantity.

2 The image coding device according to claim 1, wherein

said means for estimating complexity degrees of said images is configured so as to estimate complexity degrees of said images, based on statistics of said analyzed images.

3 The image coding device according to claim 1, wherein said means for predicting complexity degrees of said images is configured so as to predict complexity degrees of said images, based on said complexity degrees of said images that were already analyzed.

4 The image coding device according to claim 1, wherein, in coding said images, which were input, with a predetermined coding method, said means for observing said characteristics is configured so as to observe code quantity, which are generated in coding said images, or said generated code quantity, and a value of a quantization scale used.

5 The image coding device according to claim 1, wherein said means for observing said characteristics is configured so that: in an event of making an intra-frame coding for said images that were input, a correlation is observed between neighboring pixels within a frame of said images; and

in an event of making an inter-frame predictive coding for said images that were input, inter-frame prediction error quantity of said images that were input is observed.

6 The image coding device according to claim 1, wherein said moving image coding device includes means for reducing the size of said images that were input; and wherein, said means for observing complexity degrees is configured so that: in an event of making an intra-frame coding for said images that were input, a correlation is observed between neighboring pixels within a frame of said images that were input; and in an event of making an inter-frame predictive coding for said images that were input, inter-frame prediction error quantity of said size reduced images is observed.

7 The image coding device according to claim 1, wherein said moving image coding device includes means for reducing the size of said images that were input, and wherein said means for observing complexity degrees is configured so that: in an event of making an intra-frame coding for said images that were input, a correlation is observed between neighboring pixels within a frame of said reduced images; and in an event of making an inter-frame predictive coding for said images that were input, inter-

frame prediction error quantity of said images that were input is observed.

8 The image coding device according to claim 1, wherein said moving image coding device includes means for reducing the size of said images that were input, and wherein said means for observing said complexity degrees is configured so that: in an event of making an intra-frame coding for said images that were input, a correlation is observed between neighboring pixels within a frame of said reduced images; and in an event of making an inter-frame predictive coding for said images that were input, inter-frame prediction error quantity of said size reduced images is observed.

9 The image coding device according to claim 1, wherein said means for predicting complexity degrees is configured so as to predict complexity degrees for each picture type.

10 The image coding device according to claim 1, wherein, in coding said images input by use of an image coding technique that is applied in MPEG1 or MPEG2, said constant interval fixes an interval length of a GOP, and is a multiple of N (Integer) of said interval length of said GOP.

11 The image coding device according to claim 1, wherein, in coding said images input by use of an image coding technique that is applied in MPEG1 or MPEG2, said combined interval fixes an interval length of a GOP, and is a multiple of N (Integer) of said interval length of said GOP.

12 A moving image coding device that makes a compression and coding for moving images, said image coding device comprising:

means for analyzing images, which exist in a first constant interval, to observe characteristics of each image;

based on said observed characteristics, means for estimating complexity degrees of said images;

means for predicting said complexity degrees of said images that exist in a second constant interval that succeeds said first constant interval;

means for allocating code quantity to a combined interval in which said first constant interval and said second constant interval were combined, based on said estimated complexity degrees and said predicted complexity degrees, to compute target code quantity with which said allocated code quantity is assigned to each image for all

images within said combined interval;

a buffer which is accumulating codes that are generated as a result of having coded said images;

when said computed target code quantity is assigned to each of said images, means for calculating a transition of occupancy in said buffer of said code to regulate said target code quantity so that said buffer does not give rise to an overflow or an underflow; and

means for making a compression and coding for said images according to said regulated target code quantity.

13 The image coding device according to claim 12, wherein said means for estimating complexity degrees of said images is configured so as to estimate complexity degrees of said images, based on statistics of said analyzed images.

14 The image coding device according to claim 12, wherein said means for predicting complexity degrees of said images is configured so as to predict complexity degrees of said images, based on said complexity degrees of said images that were already analyzed.

15 The image coding device according to claim 12, wherein, in coding said images, which were input, with a

predetermined coding method, said means for observing said characteristics is configured so as to observe said code quantity, which are generated in coding said images, or said generated code quantity, and a value of a quantization scale used.

16 The image coding device according to claim 12, wherein said means for observing said characteristics is configured so that: in an event of making an intra-frame coding for said images that were input, a correlation is observed between neighboring pixels within a frame of said images; and

in an event of making an inter-frame predictive coding for said images that were input, inter-frame prediction error quantity of said images that were input is observed.

17 The image coding device according to claim 12, wherein said moving image coding device includes means for reducing the size of said images that were input; and

wherein, said means for observing complexity degrees is configured so that: in an event of making an intra-frame coding for said images that were input, a correlation is observed between neighboring pixels within a frame of said images that were input; and in an event of making an inter-frame predictive coding for said images that were

input, inter-frame prediction error quantity of said size reduced images is observed.

18 The image coding device according to claim 12, wherein said moving image coding device includes means for reducing the size of said images that were input, and

wherein said means for observing complexity degrees is configured so that: in an event of making an intra-frame coding for said images that were input, a correlation is observed between neighboring pixels within a frame of said reduced images; and in an event of making an inter-frame predictive coding for said images that were input, inter-frame prediction error quantity of said images that were input is observed.

19 The image coding device according to claim 12, wherein said moving image coding device includes means for reducing the size of said images that were input, and

wherein said means for observing said complexity degrees is configured so that: in an event of making an intra-frame coding for said images that were input, a correlation is observed between neighboring pixels within a frame of said reduced images; and in an event of making an inter-frame predictive coding for said images that were input, inter-frame prediction error quantity of said size

reduced images is observed.

20 The image coding device according to claim 12, wherein said means for predicting complexity degrees is configured so as to predict complexity degrees for each picture type.

21 The image coding device according to claim 12, wherein, in coding said images input by use of an image coding technique that is applied in MPEG1 or MPEG2, said constant interval fixes an interval length of a GOP, and is a multiple of N (Integer) of said interval length of said GOP.

22 The image coding device according to claim 12, wherein, in coding said images input by use of an image coding technique that is applied in MPEG1 or MPEG2, said combined interval fixes an interval length of a GOP, and is a multiple of N (Integer) of said interval length of said GOP.

23 A moving image coding method of making a compression and coding for moving images, employing a device having a buffer for coding, said image coding method comprising steps of:

analyzing images, which exist in a constant interval, to

observe characteristics of each image;

based on said observed characteristics, estimating complexity degrees of said images;

pre-allocating code quantity to said constant interval, and computing target code quantity with which said allocated code quantity is assigned to each image for all images within said constant interval based on said estimated complexity degrees;

when said computed target code quantity is assigned to each of said images, calculating a transition of occupancy in said buffer of said code to regulate said target code quantity so that said buffer does not give rise to an overflow or an underflow; and

making a compression and coding for said images according to said regulated target code quantity.

24 The image coding method according to claim 23, wherein in said step of estimating said complexity degrees of said images said complexity degrees of said images are estimated, based on statistics of analyzed images.

25 The image coding method according to claim 23, wherein in said step of predicting said complexity degrees of said images said complexity degrees of said images are predicted, based on said complexity degrees of said images

that were already analyzed.

26 The image coding method according to claim 23, wherein, when said images that were input are coded with a predetermined coding method, in said step of observing said characteristics are observed said code quantity, which are generated in coding, or said generated code quantity, and a value of a quantization scale used.

27 The image coding method according to claim 23, wherein, in said step of observing said characteristics, in an event of making an intra-frame coding for images that were input, a correlation is observed between neighboring pixels within a frame of said images, and in an event of making an inter-frame predictive coding for images that were input, intra-frame prediction error quantity of said images that were input is observed.

28 The image coding method according to claim 23, wherein said moving image coding method further includes a step of reducing the size of said images that were input, and wherein, in said step of observing said complexity degrees, in an event of making an intra-frame coding for said images that were input, a correlation is observed between neighboring pixels within a frame of said images

that were input, and in an event of making an inter-frame predictive coding for said images that were input, inter-frame prediction error quantity of said size reduced images is observed.

29 The image coding method according to claim 23, wherein said moving image coding method further includes a step of reducing the size of said images that were input, and

wherein, in said step of observing said complexity degrees, in an event of making an intra-frame coding for said images that were input, a correlation observed between neighboring pixels within a frame of said reduced images, and in an event of making an inter-frame predictive coding for said images that were input, inter-frame prediction error quantity of said images that were input is observed.

30 The image coding method according to claim 23, wherein said moving image coding method further includes a step of reducing the size of said images that were input, and

wherein, in said step of observing said complexity degrees, in an event of making an intra-frame coding for said images that were input, a correlation is observed between neighboring pixels within a frame of said reduced images, and in an event of making an inter-frame

predictive coding for said images that were input, inter-frame prediction error quantity of said size reduced images is observed.

31 The image coding method according to claim 23, wherein in said step of observing said complexity degrees predict complexity degrees for each picture type.

32 The image coding method according to claim 23, wherein, in coding said images input by use of an image coding technique that is applied in MPEG1 or MPEG2, said constant interval fixes an interval length of a GOP, and is a multiple of N (Integer) of said interval length of said GOP.

33 The image coding method according to claim 23, wherein, in coding said images input by use of an image coding technique that is applied in MPEG1 or MPEG2, said combined interval fixes an interval length of a GOP, and is a multiple of N (Integer) of said interval length of said GOP.

34 A moving image coding method of making a compression and coding for moving images, employing a device having a buffer for coding, said image coding method comprising

steps of:

analyzing images, which exist in a first predetermined interval, to observe characteristics of each image;

based on said observed characteristics, estimating complexity degrees of said images;

predicting complexity degrees of said images that exist in a second constant interval that succeeds said first constant interval;

allocating code quantity to a combined interval in which said first constant interval and said second constant interval were combined, based on said estimated complexity degrees and said predicted complexity degrees, to compute target code quantity with which said allocated code quantity is assigned to each image for all images within said combined interval;

when said computed target code quantity is assigned, calculating a transition of occupancy in said buffer of said code to each of said images to regulate said target code quantity so that said buffer does not give rise to an overflow or an underflow; and

making a compression and coding for said images according to said regulated target code quantity.

35 The image coding method according to claim 34, wherein in said step of estimating said complexity degrees of said

images said complexity degrees of said images are estimated, based on statistics of analyzed images.

36 The image coding method according to claim 34, wherein in said step of predicting said complexity degrees of said images said complexity degrees of said images are predicted, based on said complexity degrees of said images that were already analyzed.

37 The image coding method according to claim 34, wherein, when said images that were input are coded with a predetermined coding method, in said step of observing said characteristics are observed said code quantity, which are generated in coding, or said generated code quantity, and a value of a quantization scale used.

38 The image coding method according to claim 34, wherein, in said step of observing said characteristics, in an event of making an intra-frame coding for images that were input, a correlation is observed between neighboring pixels within a frame of said images, and in an event of making an inter-frame predictive coding for images that were input, intra-frame prediction error quantity of said images that were input is observed.

39 The image coding method according to claim 34, wherein said moving image coding method further includes a step of reducing the size of said images that were input, and

wherein, in said step of observing said complexity degrees, in an event of making an intra-frame coding for said images that were input, a correlation is observed between neighboring pixels within a frame of said images that were input, and in an event of making an inter-frame predictive coding for said images that were input, inter-frame prediction error quantity of said size reduced images is observed.

40 The image coding method according to claim 34, wherein said moving image coding method further includes a step of reducing the size of said images that were input, and

wherein, in said step of observing said complexity degrees, in an event of making an intra-frame coding for said images that were input, a correlation observed between neighboring pixels within a frame of said reduced images, and in an event of making an inter-frame predictive coding for said images that were input, inter-frame prediction error quantity of said images that were input is observed.

41 The image coding method according to claim 34, wherein

said moving image coding method further includes a step of reducing the size of said images that were input, and

wherein, in said step of observing said complexity degrees, in an event of making an intra-frame coding for said images that were input, a correlation is observed between neighboring pixels within a frame of said reduced images, and in an event of making an inter-frame predictive coding for said images that were input, inter-frame prediction error quantity of said size reduced images is observed.

42 The image coding method according to claim 34, wherein in said step of observing said complexity degrees predicts complexity degrees for each picture type.

43 The image coding method according to claim 34, wherein, in coding said images input by use of an image coding technique that is applied in MPEG1 or MPEG2, said constant interval fixes an interval length of a GOP, and is a multiple of N (Integer) of said interval length of said GOP.

44 The image coding method according to claim 34, wherein, in coding said images input by use of an image coding technique that is applied in MPEG1 or MPEG2, said combined

interval fixes an interval length of a GOP, and is a multiple of N (Integer) of said interval length of said GOP.

45 A program for causing an information processing device, which configures a moving image coding device that makes a compression and coding for moving images, to execute processes of: analyzing images, which exist in a constant interval, to observe characteristics of each image;

based on said observed characteristics, estimating complexity degrees of said images;

pre-allocating code quantity to said constant interval, and computing target code quantity with which said allocated code quantity is assigned to each image for all images within said constant interval based on said estimated complexity degrees;

when said computed target code quantity is assigned to each of said images, calculating a transition of occupancy in a buffer of said code to regulate said target code quantity so that said buffer does not give rise to an overflow or an underflow; and

making a compression and coding for said images according to said regulated target code quantity.

46 A program for causing an information processing device,

which configures a moving image coding device that makes a compression and coding for moving images, to execute processes of:

analyzing images, which exist in a first predetermined interval, to observe characteristics of each image;

based on said observed characteristics, estimating complexity degrees of said images;

predicting complexity degrees of said images that exist in a second constant interval that succeeds said first constant interval;

allocating code quantity to a combined interval in which said first constant interval and said second constant interval were combined, based on said estimated complexity degrees and said predicted complexity degrees, to compute target code quantity with which said allocated code quantity is assigned to each image for all images within said combined interval;

when said calculated target code quantity is assigned to each of said images, calculating a transition of occupancy in a buffer of said code to regulate said target code quantity so that said buffer does not give rise to an overflow or an underflow; and

making a compression and coding for said images according to said regulated target code quantity.